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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,505	10/27/2003	Masahiro Mohri	14836-004001	2667

26211 7590 01/21/2005  
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NEW YORK, NY 10022-4611

EXAMINER
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ROBERT, RUSSELL MARC

ART UNIT	PAPER NUMBER
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2829

DATE MAILED: 01/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/694,505	MOHRI ET AL.	
	Examiner	Art Unit	
	Russell M Kobert	2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1003</u> . | 6) <input type="checkbox"/> Other: _____  |

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Wieser et al (Journal Title: A new technique for two-dimensional current distribution measurements in electrochemical cells).

Wieser et al anticipates a current density measuring apparatus (Figure 5) for measuring current density in an electrode surface of a fuel cell, said fuel cell including an electrolyte electrode assembly and separators for sandwiching said electrolyte electrode assembly, said electrolyte electrode assembly including a pair of electrodes and an electrolyte interposed between said electrodes, said current density measuring apparatus comprising:

a plurality of Hall elements (3) provided at positions corresponding to measuring positions in said electrode surface; and

an output voltage measuring mechanism (HP 3852; pg. 807, col. 1, ln 4-6) for measuring voltage values outputted from said Hall elements during power generation of said fuel cell,

wherein current density distribution (Figure 6) in said electrode surface is determined based on said voltage values measured by said output voltage measuring mechanism; as recited in claim 1.

As to claim 2, having an electrically conductive sensor mounting plate having a plurality of poles provided at positions corresponding to the measuring positions in the electrode surface, wherein a current sensor is attached to each of the poles is anticipated (Wieser et al refers to placing the current sensor around a "gudgeon"; see pg. 806, col. 1, ln 12-16).

As to claim 3, having the current sensor including the Hall element and a substantially annular ferrite core (2) having a slit (shown where Hall element 3 is positioned); and the ferrite core being substantially fitted to the pole (the ferrite core 2, part of current sensor positioned around a "gudgeon" noted supra) and the Hall element attached to the slit of the ferrite core (shown in Figure 5) is anticipated by Wieser et al.

As to claim 4, having the sensor mounting plate provided on a cathode side of the fuel cell is considered inherent to Wieser et al because Wieser et al discloses in an alternate configuration mounting the measurement frame on the anode (implies by default, the measurement frame would have to have been mounted on the cathode).

As to claim 5, having the output voltage measuring mechanism connected to each of the Hall elements including a current monitor for determining current density distribution in the electrode surface based on the voltage values outputted from the Hall elements is anticipated by Wieser et al (pg. 807, col. 1, ln 2-14).

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

De Vaal et al (6815101) discloses fuel cell monitoring and control.

Kearl (6828055) discloses the use of a sensor, such as a Hall Effect sensor, for measuring the voltage of a cell or set of cells in a fuel cell stack (col 11, ln 10-28).

Noponen et al (Journal Article: Measurement of current distribution in a free-breathing PEMFC) discloses a measurement system for the mapping of current distribution in a polymer electrolyte membrane fuel cell (PEMFC).

4. A shortened statutory period for response to this action is set to expire three month(s) from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell Kobert whose telephone number is (571) 272-1963. The Examiner's Supervisor, Nestor R. Ramirez, can be reached at (571) 272-2034. For an automated menu of Tech Center 2800 phone numbers call (571) 272-2800.



Russell M. Kobert  
Patent Examiner  
Group Art Unit 2829  
January 13, 2005



DAVID ZARNEKE  
PRIMARY EXAMINER

1/13/05